

Reye Syndrome



Section 1:

ABOUT THE DISEASE

A. Etiologic Agent

Reye syndrome itself is not an infection. It is an acute illness that most commonly occurs in children who are recovering from a viral illness, often influenza (especially influenza B) or chickenpox, and who have taken aspirin or aspirin-containing products during their illness.

B. Clinical Description

Reye syndrome is a rare, acute, and potentially life-threatening condition. It affects primarily the central nervous system (causing an acute, non-inflammatory encephalopathy) and liver (causing elevations in ammonia levels and liver enzymes, but no jaundice). It usually begins abruptly with vomiting and lethargy during the recovery period of a viral illness. The patient may develop confusion and other changes in mental function, and may eventually become delirious. As the syndrome progresses, breathing may become sluggish, and seizures, coma, and death may occur. The case-fatality rate for Reye syndrome may be as high as 10–40%.

C. Vectors and Reservoirs

Not applicable.

D. Modes of Transmission

Reye syndrome is not transmissible.

E. Incubation Period

Reye syndrome usually appears 5–7 days after the start of a viral illness.

F. Period of Communicability or Infectious Period

Reye syndrome is not communicable from person to person.

G. Epidemiology

Children between the ages of 5–16 years are most commonly reported to have Reye syndrome. Illness is more common during the winter months when numerous viral illnesses are circulating, although the seasonality of Reye syndrome has become less apparent since 1990. Historically, epidemics of Reye syndrome have paralleled epidemics of influenza, especially influenza B. However, the incidence of Reye syndrome has decreased dramatically since 1980, corresponding to increased awareness among physicians and parents of the documented association between salicylate use and the development of Reye syndrome. Between 1994–1997, no more than two cases were reported to the Centers for Disease Control and Prevention (CDC), annually. There is no longer a demonstrated link between high influenza activity and the incidence of Reye syndrome.

H. Bioterrorist Potential

Not applicable.



Section 2:

REPORTING CRITERIA AND LABORATORY TESTING

A. What to Report to the Massachusetts Department of Public Health (MDPH)

Report any case of Reye syndrome diagnosed by a health care provider based on clinical symptoms.

Note: See Section 3C for information on how to report a case.

B. Laboratory Testing Services Available

The diagnosis of Reye syndrome is not based on any laboratory test results.



Section 3:

REPORTING RESPONSIBILITIES AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- ◆ To identify contributing factors. Reye syndrome is a disorder that involves a viral infection with a cofactor. Through surveillance, other potential causes of the condition may be identified.
- ◆ To determine if there is a genetic predisposition for Reye syndrome.
- ◆ To determine if Reye syndrome is correlated with other illnesses or disease processes.

B. Laboratory and Health Care Provider Reporting Requirements

Reye syndrome is reportable to the local board of health (LBOH). The MDPH requests that health care providers immediately report to the LBOH in the community where the case is diagnosed, all confirmed or suspect cases of Reye syndrome, as defined by the reporting criteria in Section 2A.

Laboratories performing examinations on any specimens derived from Massachusetts residents that yield evidence of varicella or influenza infection shall report such evidence of infection directly to the MDPH within 24 hours. (See the *Chickenpox and Shingles* and *Influenza* chapters in this manual for more information on these pathogens.)

C. Local Board of Health (LBOH) Reporting and Follow-Up Responsibilities

Reporting Requirements

MDPH regulations (*105 CMR 300.000*) stipulate that Reye syndrome is reportable to the LBOH and that each LBOH must report any confirmed case of Reye syndrome or suspect case of Reye syndrome, as defined by the reporting criteria in Section 2A. Cases should be reported to the MDPH Bureau of Communicable Disease Control, Office of Integrated Surveillance and Informatics Services (ISIS) using a MDPH *Reye Syndrome Case Report Form* (found at the

end of this chapter). Refer to the *Local Board of Health Timeline* at the end of this manual's *Introduction* section for information on prioritization and timeliness requirements of reporting and case investigation.

Case Investigation

1. It is the responsibility of the LBOH to complete a MDPH *Reye Syndrome Case Report Form* (found at the end of this chapter) by interviewing the case and others who may be able to provide pertinent information. Much of the information required on the form can be obtained from the health care provider or from the medical record.
2. Use the following guidelines to assist in completing the form:
 - a. Accurately record demographic information, including a full name and address for the case, and hospitalization information, including date of symptom onset, date(s) of hospitalization, and the outcome of disease.
 - b. Provide information about antecedent (previous) illnesses and medications during the three weeks prior to onset of Reye syndrome.
 - c. Provide information about symptoms and any vaccinations received during the month prior to onset of Reye syndrome.
 - d. Complete the "Laboratory Data" section. This information is important in defining a case. You may ask the health care provider to submit a copy of the medical record to you or enlist his/her aid in completing these sections of the case report form.
 - e. If you have made several attempts to obtain case information but have been unsuccessful (e.g., the case or health care provider does not return your calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), please fill out the form with as much information as you have gathered. Please note on the form the reason(s) why it could not be filled out completely.
3. After completing the form, attach laboratory report(s) and fax or mail (in an envelope marked "Confidential") to ISIS. The confidential fax number is (617) 983-6813. Call ISIS at (617) 983-6801 to confirm receipt of your fax. The mailing address is:

MDPH, Office of Integrated Surveillance and Informatics Services (ISIS)
305 South Street, 5th Floor
Jamaica Plain, MA 02130
Fax: (617) 983-6813

4. Institution of disease control measures is an integral part of case investigation. It is the responsibility of the LBOH to understand, and if necessary, institute the control guidelines listed in Section 4.



Section 4:

CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements (*105 CMR 300.200*)

None.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

Reported Incidence Is Higher Than Usual/Outbreak Suspected

If the number of cases of Reye syndrome reported in your city/town is higher than usual or if you suspect an outbreak, investigate any clustered cases in an area or institution to determine common factors. Consult with the epidemiologist on-call at the MDPH Division of Epidemiology and Immunization at (617) 983-6800 or (888) 658-2850. The Division can help determine a course of action to prevent further cases and can perform surveillance for cases across town lines, which would otherwise be difficult to identify at the local level.

D. Preventive Measures

Remind caregivers to:

- ◆ Never give infants, children, or teenagers aspirin or aspirin-containing drugs for viral illnesses. For management of fever, they should use acetaminophen (e.g., Tylenol®) or ibuprofen (e.g., Motrin®).
- ◆ Consult with a health care provider immediately if children recovering from a viral illness suddenly develop nausea, vomiting, or confusion.
- ◆ Obtain routine vaccination for their children to protect against influenza and varicella.



ADDITIONAL INFORMATION

There is no formal CDC surveillance case definition for Reye syndrome. For reporting to the MDPH, always use the criteria outlined in Section 2A.



REFERENCES

- American Academy of Pediatrics. Pickering L.K., ed. *Red Book: 2003 Report of the Committee on Infectious Diseases, 26th Edition*. Elk Grove Village, IL, American Academy of Pediatrics; 2003.
- Belay, E.D., Bresee, J.S., Holman, R.C., Khan, A.S., et al. Reye's Syndrome in the U.S. from 1981 through 1997. *N Engl J Med*. 1999; 340: 1377–82.
- CDC. Surgeon General's Advisory on the Use of Salicylates and Reye Syndrome. *MMWR*. 1982; 31(22): 289-290.
- Heymann, D., ed. *Control of Communicable Diseases Manual, 18th Edition*. Washington, DC, American Public Health Association, 2004.
- MDPH. *Regulation 105 CMR 300.000: Reportable Diseases, Surveillance, and Isolation and Quarantine Requirements*. MDPH, Promulgated November 4, 2005.



FORMS & WORKSHEETS

Reye Syndrome

Reye Syndrome



LBOH Action Steps

This form does not need to be submitted to the MDPH with the case report form. It is for LBOH use and is meant as a quick-reference guide to Reye syndrome case investigation activities.

LBOH staff should follow these steps when Reye syndrome is suspected or confirmed in the community. For more detailed information, including disease epidemiology, reporting, case investigation, and follow-up, refer to the preceding chapter.

- ☐ Notify the MDPH Division of Epidemiology and Immunization, at (617) 983-6800 or (888) 658-2850, to report any confirmed or suspect case(s) of Reye syndrome.
- ☐ Fill out the case report form (attach laboratory results, if applicable).
- ☐ Send the completed case report form (with laboratory results) to the MDPH Bureau of Communicable Disease Control, Office of Integrated Surveillance and Informatics Services (ISIS).